



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,842	11/24/2003	Edward F. Burke	D/A0397	6948
25944	7590	10/03/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER GARCIA JR, RENE	
			ART UNIT 2853	PAPER NUMBER

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

110

Office Action Summary	Application No.		Applicant(s)	
	10/721,842		BURKE ET AL.	
	Examiner		Art Unit	
	Rene Garcia, Jr.		2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-17 and 19 is/are rejected.
- 7) ☒ Claim(s) 5-7, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/25/03; 4/5/05</u> | 6) <input type="checkbox"/> Other: ____. |

Best Available Copy

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 14, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated Billet (US 6,010,205).

Billet disclose the following claimed limitations:

*regarding claim 1, method comprising: performing a primary image pass to print a plurality of scan lines using enable ink jets (abstract; fig. 1a)

*performing one or more additional imaging passes to print additional scan lines to fill in for one or more disable ink jets using one or more of the enable ink jets wherein the additional scan lines would normally be printed by the one or more disable ink jets if they were operative (col. 4, lines 60-65; col. 6, lines 32-42)

*regarding claim 2, determining if at least one or more ink jets are improperly functioning and disabling the one or more improperly functioning ink jets (col. 6, lines 51-65)

*regarding claim 3, response to a determination that one or more ink jets are improperly functioning, determining whether or not one or more other operational ink jets are of a same

Art Unit: 2853

color which may replace the one or more improperly functioning ink jets (figs. 2A & 2B; col. 6, lines 32-42 & 48-67; col. 7, lines 6-11)

*regarding claim 4, response to a determination that one or more other operational ink jets of the same color may fill in for the one or more improperly functioning ink jets, disabling the one or more improperly functioning ink jets and performing a primary image pass followed by one or more additional imaging passes to fill in for the one or more disable ink jets by enabling the one or more other operational jets of the same color (figs. 2A & 2B; col. 6, lines 32-42 & 48-67; col. 7, lines 6-11)

*regarding claims 14 and 17, printer comprising: a print engine having image rendering and handling software commands to enable or disable one or more user selected jets wherein once user selected jets are determined to have failed one or more non-failed jets neighboring the one or more failed jets are enabled to substitute for the one or more failed jets (col. 6, lines 11-15)

*regarding claim 19, default print command is used for the print engine to perform jet substitution when one or more jets are disabled (col. 9, line 36- col. 10, line 49- lookup table created once a missing nozzle detected, used for printing image)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billet (US 6,010,205) in view of Adler et al. (US 6,217,148).

Billet discloses the following claimed limitations:

*regarding claim 8, method comprising: depositing a plurality of scan lines using enable ink jets (abstract; fig. 1a)

*depositing a plurality of additional scan lines using one or more of the enable ink jets wherein the plurality of additional scan lines would normally be printed by disabled ink jets if they were operative whereby the one or more enable ink jets fill in for the one or more disabled ink jets (col. 4, lines 60-65 & col. 6, lines 32-42)

*regarding claim 9, determining if at least one or more ink jets are improperly functioning and disabling the one or more improperly functioning ink jets (col. 6, lines 51-65)

Billet does not disclose the following claimed limitations:

*regarding claim 8, on a unidirectionally rotating print drum

Adler et al. discloses the following:

*regarding claim 8, unidirectionally rotating print drum/2/ (fig. 2; known in the art that drum rotates in one direction)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a unidirectionally rotating print drum as taught by Adler et al. into Billet for the purpose of feeding the substrate in the printing path of the print head.

5. Claims 10, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billet (US 6,010,205) as modified by Adler et al. (US 6,217,148) and further in view of Takanaka (US 6,347,855).

Billet as modified by Adler et al. discloses the claimed limitations except for the following:

*regarding claims 10 and 12, depositing the plurality of additional scan lines by performing a left imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disable ink jets

*regarding claims 11 and 12, depositing the plurality of additional scan lines by performing a right imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disable ink jets

Takanaka discloses the following:

*regarding claims 10 and 12, depositing the plurality of additional scan lines by performing a left imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disable ink jets (figs. 1A-1G; col. 11, lines 17-55; col. 13, lines 37-42 – bidirectional printing allows ink jets

to fire on a backward pass/opposite direction/ [left imaging pass]) for the purpose of averaging the frequency of use of the nozzles and extending the service life of the print head

*regarding claims 11 and 12, depositing the plurality of additional scan lines by performing a right imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disable ink jets (figs. 1A-1G; col. 11, lines 17-55; col. 13, lines 37-42 – bidirectional printing allows ink jets to fire on a forward pass/direction/ [right imaging pass]) for the purpose of averaging the frequency of use of the nozzles and extending the service life of the print head

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize depositing the plurality of additional scan lines by performing a left imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disable ink jets; and depositing the plurality of additional scan lines by performing a right imaging pass such that the one or more enable ink jets line up horizontally where the one or more disable ink jets would normally be printed by the one or more disabled ink jets as taught by Takanaka into Billet as modified by Adler et al. for the purpose of averaging the frequency of use of the nozzles and extending the service life of the print head.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billet (US 6,010,205) as modified by Adler et al. (US 6,217,148) and further in view of Murcia et al. (US 6,270,187).

Art Unit: 2853

Billet as modified by Adler et al. discloses the claimed limitations except for the following:

* regarding claim 13, substituting the one or more disable ink jets with a combination of different colors using the one or more operational ink jets

Murcia et al. discloses the following:

* regarding claim 13, substituting the one or more disable ink jets with a combination of different colors using the one or more operational ink jets (figs. 1 & 2; col. 9, lines 21-31)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize substituting the one or more disable ink jets with a combination of different colors using the one or more operational ink jets as taught by Murcia et al. into Billet as modified by Adler et al. for the purpose of forming a composite black to replace failed black nozzle(s).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billet (US 6,010,205) in view of Lapstun (US 6,512,596).

Billet discloses the following claimed limitations:

*regarding claim 15, image rendering and handling software (col. 6, lines 11-15)

Billet does not disclose the following claimed limitations:

*regarding claim 15, contains one or more Page Description Languages

Lapstun discloses the following:

*regarding claim 15, contains one or more Page Description Languages (col 8 lines 2-11)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize image rendering and handling software containing one or more

Art Unit: 2853

Page Description Languages as taught by Lapstun into Billet for the purpose of reducing the rendering burden on the PC and reduce the amount of data transmitted to from the PC to the printer.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Billet (US 6,010,205) in view of DeBusschere et al. (US PG PUB 2003/0151634).

Billet discloses the following claimed limitations:

*regarding claim 16, control/**user interface**/ for user interaction is provided to enable or disable one or more user selected jets (col. 4, lines 7-11)

Billet does not disclose the following claimed limitations:

*regarding claim 16, front panel control

DeBusschere et al. discloses the following:

*regarding claim 16, front panel control/**22**/ (paragraph 0021)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a front panel control taught by DeBusschere et al. into Billet for the purpose of providing a user interface for setting parameters.

Allowable Subject Matter

9. Claims 5, 6, 7 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claim 5 is the inclusion of the method step performing a left imaging pass by starting a secondary imaging pass right of the primary imaging

Art Unit: 2853

pass such that the enable neighboring operational ink jet is lined up horizontally where the disable ink jet started on the primary imaging pass. It is these steps found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 6 is the inclusion of the method step performing a right imaging pass by starting a secondary imaging pass left of the primary imaging pass such that the enable neighboring operational ink jet is lined up horizontally where the disabled ink jet started on the primary imaging pass. It is these steps found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 7 is the inclusion of the method steps performing a left imaging pass by starting a secondary imaging pass right of the primary imaging pass such that the enable neighboring operational ink jet is lined up horizontally where the disable ink jet started on the primary imaging pass; and performing a right imaging pass by starting a secondary imaging pass left of the primary imaging pass such that the enable neighboring operational ink jet is lined up horizontally where the disable ink jet started on the primary imaging pass. It is these steps found in each of the claims, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claim 18 is the inclusion of the limitation of a printer including flag indicating whether or not the print engine may perform failed jet substitution. It is this limitation found in each of the claims, as it is claimed in the combination,

Art Unit: 2853

that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art

The primary reason for the allowance of claim 20 is the inclusion of the limitation of a printer including command to not perform jet substitution. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art

Conclusion

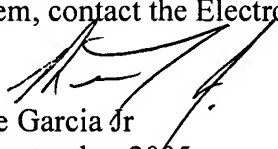
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Neese et al. (US 6,398,342) discloses an open jet compensation for nonfunctional nozzles. Vilanova et al. (US PGPUB 2002/0101602) discloses a print mask system to circumvent malfunctioning nozzles.

Art Unit: 2853

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rene Garcia, Jr. whose telephone number is (571) 272-5980. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rene Garcia Jr
22 September 2005


K. PEGGINS
PRIMARY EXAMINER

9/15

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☒ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.